

Chemistry Sophomore Research Seminar

Chemistry 2950 (CRN 86010)

Fall 2018

Prerequisites:	Chem 1212K with grades of C or higher (can be corequisite)
Instructor:	Dr. Gigi B. Ray , 212 Courtland North, Tel. (404) 413-5540, gbray@gsu.edu
Class:	Fridays 10:20 am – 11:50 am, 311 Petit Science Center (2-credit hour course) Meet individually with instructor weekly to discuss writing/presentations
Office Hours:	Mondays 12:30 – 2:30pm, and Wednesdays 3:00 – 5:00pm Individual appointments: Mon 2:30 – 4:30pm, Wed 10:30am – 12:30pm
Textbook: <i>none</i>	Class handouts will be posted on iCollege: CHEMICAL RESEARCH Section 003 Fall Semester 2018
Course Objectives:	Introduction to research in various areas of chemistry: Organic, Medicinal, Physical, Analytical, Computational, Biophysical, Biochemistry, and Geochemistry. Introduction to drug development, biosensors and patents. Explore options for undergraduate research, on and off campus internships, summer research opportunities, dual degree BS/MS program and Honors. Explore potential career paths with a chemistry or biochemistry major, and job searching strategies. Attend professional club meetings and research seminars. Explore the scientific literature by examining a science topic of interest, and the development of a well-known scientist's career. Develop research skills by becoming familiar with use of scientific databases: SciFinder Scholar, Web of Science, PubMed and Medline Plus. Become proficient with use of the EndNote reference management system. Develop the ability to effectively read and write scientific papers, and give short oral presentations to communicate scientific knowledge. Become proficient in the use of ChemBioDraw Ultra software to represent chemical reactions.
Grading:	Total points: 100 25 points: Research Report 1 20 points: Research Report 2 5 points each: Two Oral Presentations, Poster Presentation Personal Statement, Career Assignment, ChemDraw Assignment Research Seminar Synopsis (3), Database Assignment 10 points: Class attendance/participation
	A+ 97% A 90% A- 87% B+ 84% B 80% B- 76% C+ 71% C 65% C- 59% D 50% F <50%

Contacts:	<p>Kelsey Jordan, Science Librarian, kjordan44@gsu.edu, Library South, Suite 542</p> <p>Kimberley Bartlett, TA, kbartlett4@student.gsu.edu</p>
Activities and Policies:	<p>1) <u>Research Reports:</u> Students will write two research reports, 3-4 pages each, double spaced, with references in ACS style. Three or more reference sources need to be used, with at least two from peer-reviewed journal articles, and only one source can be a webpage. Check report in Grammarly before submission.</p> <p><i>Report Topics:</i></p> <p>(i) Discuss science topic of interest to student (approved by instructor).</p> <p>(ii) Describe work of a famous, living research scientist, who is not at GSU or has not given a seminar recently at GSU (approved by instructor).</p> <p>2) <u>Seminars:</u> Students need to attend 3 research seminars during the semester: at least two will be Chemistry seminars, one can be from a related department (Biology, Neuroscience, MBD, CDT), a professional club meeting, or conference. Students will sign in at seminars and submit a half page synopsis of the presentation, discussing presentation content and presentation style.</p> <p>3) <u>Posters:</u> Students will present a poster on their first topic at the Undergraduate STEM Research Conference on Friday October 26th.</p> <p>4) <u>Personal Statement:</u> Students will submit a personal statement including why they are interested in science and career goals.</p> <p>5) <u>Career Assignment:</u> Career descriptions & specific plan to achieve goals.</p> <p>6) <u>ChemBioDraw Assignment:</u> Using this software, students will create & submit a drawing of a complex pharmaceutical compound and a reaction mechanism.</p> <p>7) <u>Attendance, timely arrival and participation in all class meetings required.</u> If absent, it is the student's responsibility to makeup missed work. Students must pay attention to speaker (instructor, guest speaker, or classmate), <i>and NOT browse the internet or do other work during class.</i></p> <p>8) <u>Submit hardcopy printouts of all assignments in class on due date.</u> Additionally, electronic copies of research reports need to be submitted in <i>iCollege</i> dropbox that checks for content originality (Turnitin). Late submissions only accepted in person up to one week past due date (-10% points/day late).</p> <p>9) <u>Submitted work</u> must represent individual student effort (not plagiarized).</p> <p>10) <u>Personal cell phones, iPhones, iPods, Blue tooth devices, and other electronic devices must be OFF during all classes.</u> Laptops and tablets will be allowed during some class meetings.</p> <p>11) <u>Tuesday October 9th is last day to withdraw from the class & receive "W"</u> You are responsible for withdrawing before the deadline if you need to do so. The University requires that faculty members must, on a date after the mid-point of the course to be set by the Provost (or his designee):</p> <ol style="list-style-type: none"> 1. Give a WF to all those students who are on their rolls but no longer taking the class. 2. Report the last day the student attended or turned in an assignment.

CHEM 2950 – Fall 2018 TENTATIVE CLASS SCHEDULE (Subject to change)

Date	Day	Topics	Meeting
Aug 24	F	<ul style="list-style-type: none"> • Introduction to Course • Searching Databases – SciFinder Scholar • Reading Scientific Articles • Students select Research Topic for 1st Report • STEM Course planning, Biochemistry Concentration 	1
Aug 31	F	<ul style="list-style-type: none"> • Searching Databases: Web of Science, PubChem • BS/MS Dual Degree Program, Honors and ACS certification • Undergraduate Research Internships, Scholarships, and Summer Programs • Students continue Research for 1st Report → Submit Database Assignment & Title of 1st Report 	2
Sep 6	R	Attend Student Organization Fair at GSU	
Sep 7	F	<ul style="list-style-type: none"> • Speaker: Dr. Victoria Mariani (Personal Statements) • Effective Writing in the Sciences, Avoiding Plagiarism • Joining a Research Lab → Submit Thesis Paragraph, Article & Outline for 1st Research Report 	3
Sep 14	F	<ul style="list-style-type: none"> • GSU Career Services: Careers in Chemistry and Biochemistry Job Searching Strategies, Resumes, Career Options & Planning • Drawing Reaction Mechanisms Using ChemBioDraw Ultra → Submit 1st Research Report (Science Topic) 	4
Sep 21	F	<ul style="list-style-type: none"> • Speaker: Dr. Ming Luo (Biochemistry & Drug Development) • Preparing Oral Presentations & Reaxys Database → Submit 1st seminar synopsis → Submit Career Assignment 	5
Sep 21	F	Attend Georgia ACS HMURS Conference at Georgia Gwinnett	
Sep 28	F	<ul style="list-style-type: none"> • Speaker: Dr. Maged Henary (Organic Chemistry) • 5-minute Student Oral Presentations #1 (3 students) → Submit Revised 1st Research Report 	6
Oct 3	W	Attend All Majors Career Fair at GSU	
Oct 5	F	<ul style="list-style-type: none"> • 5-minute Student Oral Presentations #1 (9 students) • Preparing Science Posters → Submit PowerPoint 1 & ChemBioDraw assignment 	7
Oct 9	T	Last day to Withdraw and possibly receive a W	
Oct 12	F	<ul style="list-style-type: none"> • Speaker: Dr. David Ashley (Public Health & Environmental Chem) • Discuss 2nd Report on Famous Scientist → Submit 12 PPT poster slides & Personal Statement 	8

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Date	Day	Topics	Meeting
Oct 19	F	<ul style="list-style-type: none"> • Speaker: Research Student Panel & Sample Posters • Planning for Graduate School <ul style="list-style-type: none"> ➔ <i>Submit 3'x4' Poster Draft and Peer Review & 2nd seminar synopsis</i> ➔ <i>Submit Extra Credit Resume Assignment</i> 	9
Oct 26	F	<ul style="list-style-type: none"> • Speaker: Dr. Mark Germann (Spectroscopy) • ACS Style Bibliography and Reference Management <ul style="list-style-type: none"> ➔ <i>Submit Thesis Paragraph & Articles for 2nd Report (on Scientist)</i> 	10
Oct 26	F	<ul style="list-style-type: none"> • <i>Present Poster at STEM Undergraduate Research Conference</i> 	
Oct 30	T	<i>Attend Graduate & Professional School Fair</i>	
Nov 2	F	<ul style="list-style-type: none"> • Speaker: Dr. David Wilson (Biophysical & Computational Chem) • Joining a Research Lab <ul style="list-style-type: none"> ➔ <i>Submit Outline for 2nd Research Report (on Scientist)</i> 	11
Nov 9	F	<ul style="list-style-type: none"> • Speaker: Dr. Gangli Wang (Analytical Chemistry) • Peer Review of PowerPoint 2 <ul style="list-style-type: none"> ➔ <i>Submit PowerPoint 2 Draft for presentation on Scientist</i> 	12
Nov 16	F	<ul style="list-style-type: none"> • Speaker: Dr. Greg Van Patten (Nano-electrochemistry) • 8-minute Student Oral Presentations #2 (3 students) <ul style="list-style-type: none"> ➔ <i>Submit 2nd Research Report (on Research Scientist)</i> 	13
Nov19-23		Thanksgiving Break, no class	
Nov 30	F	<ul style="list-style-type: none"> • 8-minute Student Oral Presentations #2 (9 students) • Course Wrap-Up <ul style="list-style-type: none"> ➔ <i>Submit 3rd seminar synopsis</i> 	14
Dec 4	T	<ul style="list-style-type: none"> ➔ <i>Submit Revised 2nd Research Report (Scientist) in lieu of Final Exam by 5pm (hardcopy printout & electronic copy via iCollege)</i> 	

Fall 2018 Events:

- Friday Sep 21 – Georgia ACS Herty Undergraduate Research Conference
- Wednesday Oct 3 – All Majors Career Fair (12 – 3 pm)
- Friday Oct 26 – Undergraduate STEM Research Conference (12 – 4pm)
- Wednesday Oct 30 – Graduate & Professional School Fair (11am)
- Oct 31 – Nov 3 – SERMACS in Augusta, GA

Websites:

- GSU STEM Resources: <http://cas.gsu.edu/stem/>
- Chemistry Department webpage: <http://chemistry.gsu.edu/undergraduate/>
- Library Resources: <http://research.library.gsu.edu/chemistry>
- Honors Resources: <http://honors.gsu.edu/research/>
- GSU Career Services: <http://career.gsu.edu/>
- Chemistry & Engineering News: <http://cen.acs.org/index.html>
- American Chemical Society: <https://www.acs.org/content/acs/en/careers.html>